

SPECIFICATION AMENDMENTS

Replace the paragraph beginning at page 1, line 10 with:

~~In a waveguide layer of an~~ An end face portion, including a waveguide layer, of a semiconductor laser device or a semiconductor optical device, such as an optical modulator, is generally coated with a reflecting film ~~is generally coated. When a film thickness d of a reflecting film (coating film) having a refractive index n_1 formed on the end face portion of the semiconductor element is made odd-number times~~ has a thickness d equal to an odd integer multiple of $\lambda/(4n_1)$, the reflectance of the reflecting film becomes the a minimum value. In addition, when a coating film having a refractive index which is a square root of a refractive index n_c of a laminated element including is on a waveguide layer at the end face portion is formed, an antireflecting film can be is obtained. For example, the reference of I. Ladany, et al., "Scandium oxide antireflection coatings for superluminescent LEDs", Appl. Opt. Vol. 25, No. 4, pp. 472-473, (1986), describes a semiconductor laser in which a reflecting with an antireflection film on the end face is antireflected.

Replace the paragraph beginning at page 1, line 22 with:

Wavelength dependence of ~~a reflectance of a single-layer~~ reflectance of a single-layer reflecting film (refractive index $n_1 = 1.449$) ~~formed to have including films of various film thickness~~ thicknesses in a laminated element (effective refractive index $n_c = 3.37$), including a waveguide layer of an end face portion of a semiconductor optical device, will be considered. In this case, the reflectance is set to be the minimum value at a setting wavelength $\lambda = 980$ nm. When the reflectance is the minimum value, the film thickness is odd-number times an odd interger multiple of $\lambda/(4n_1)$. ~~When the case in which~~ If the single-layer reflecting film has a film thickness of $\lambda/(4n_1)$ and the case in which if the single-layer reflecting film has a film thickness of $5\lambda/(4n_1)$ are considered, it is understood that a flat portion near a minimal value of the reflectance in the single-layer reflecting film having the film thickness of $\lambda/(4n_1)$ is larger than that in the single-layer reflecting film having the film thickness of $5\lambda/(4n_1)$.

Replace the paragraph beginning at page 2, line 9 with:

When a ~~film~~ thickness d of the reflecting film on the end face portion of the semiconductor optical device is increased an odd-number of times $\lambda/(4n_1)$, a wavelength band of a low-reflectance area near the minimal value of the reflectance becomes narrow, and a

In re Appln. of SHIGEHARA et al.
Application No. Unassigned

semiconductor laser characteristic disadvantageously ~~largely varies under the influence of~~
significantly due to the wavelength dependence of the reflectance of the reflecting film.